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360 of SEQ ID NO:3 or from position 41 to position 487 of  
SEQ ID NO:4;

(c) a nucleotide sequence encoding the soluble  
extracellular domain of a polypeptide having the amino acid  
5 sequence as in positions 1-360 of SEQ ID NO:3 or positions  
1-487 of SEQ ID NO:4; and

(d) a nucleotide sequence complementary to any of the  
nucleotide sequences in (a), (b) or (c) above.

10 21. An isolated nucleic acid molecule comprising a  
polynucleotide having a nucleotide sequence at least 90%  
identical to a sequence selected from the group consisting  
of:

(a) a nucleotide sequence encoding a polypeptide  
15 comprising a portion of SEQ ID NOS:3 or 4, wherein said  
portion lacks from 30 to 50 amino acids from the amino  
terminus of said complete amino acid sequence as in SEQ ID  
NO:3 or 4;

(b) a nucleotide sequence encoding a polypeptide  
20 comprising a portion of amino acid sequence of SEQ ID NO: 3  
or 4 wherein said portion lacks from 131 to 171 amino acids  
from the carboxy-terminus of said complete amino acid  
sequence as in SEQ ID NO:3 or 4; and

c) a nucleotide sequence encoding a polypeptide  
25 comprising a portion of the amino acid sequence of SEQ ID  
NO: 3 or 4 wherein said portion includes a combination of  
any of the amino terminal and carboxy terminal deletions  
according to (a) and (b), above.

30 22. A substantially pure polypeptide comprising  
an amino acid sequence at least 70% identical to an amino  
acid sequence selected from the group consisting of:

(a) the amino acid sequence of a full-length  
polypeptide having the complete amino acid sequence as in

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SEQ ID NO:3 or 4;

(b) the amino acid sequence comprising a portion of the complete amino acid sequence as in SEQ ID NO:3 or 4 wherein said portion lacks from 30-50 amino acids from the amino terminus of said complete amino acid sequence.

(c) the amino acid sequence comprising a portion of the complete amino acid sequence as in SEQ ID NO:3 or 4 wherein said portion lacks from 131-171 amino acids from the carboxy-terminus of said complete amino acid sequence.

(d) the amino acid sequence comprising a portion of the complete amino acid sequence as in SEQ ID NO:3 or 4 wherein said portion is the result of a combination of any of the amino-terminal and carboxy-terminal deletions according to (b) and (c), above.

23. A method of treating obesity and diseases and disorders associated with obesity comprising administering to a patient in need thereof an effective amount of the polypeptide as claimed in claim 22, or an antagonist thereof.

24. A chimeric protein comprising the polypeptide of Claim 22 fused to a heterologous polypeptide.

25. The chimeric protein of Claim 24 in which the heterologous polypeptide is a constant region of an immunoglobulin.

26. A pharmaceutical formulation containing as an active ingredient a composition as claimed in Claim ~~4 or 12.~~

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27. Method of treating obesity or obesity related diseases by administering a pharmaceutical formulation as claimed in Claim 26.

5 28. The use of a composition as claimed in Claim ~~4 or~~<sup>22</sup>  
~~12~~ for the manufacture of a medicament for the treatment of obesity and/or obesity- related disorders.

10 29. A pharmaceutical formulation adapted for the treatment of obesity and/or obesity- related disorders containing a composition as claimed in Claim ~~4 or 12~~.  
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